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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

NORRIS, JEREMY C

ART UNIT PAPER NUMBER

2841

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/678,062

Applicant(s)

HIRANO ET AL.

Examiner

Jeremy C. Norris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1-3 and 7-9, in the reply filed on 28 April 2006 is acknowledged. The traversal is on the ground(s) that "a search and examination of the entire application would not place a *serious* burden on the Examiner" (emphasis original). This is not found persuasive because, as stated in the original Restriction requirement, the different inventions have acquired separate status in the art as evidenced by the different classifications. Thus, the inventions have divergent search areas which would place a serious burden on the Examiner for examination purposes.

The requirement is still deemed proper and is therefore made FINAL.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "2" in figures 1A, 1B. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

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notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "5" has been used to designate both a wiring part and a double-sided adhesive material part. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 3 and 9 are objected to because of the following informalities: Lines 2-3 of claims 3 and 9 state the limitation "said elastic conductive board" without a previous mention of such a feature. Appropriate correction is required. The Examiner assumes, for examination purposes, that this limitation was intended to read --said elastic conductive material part--.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US 5,510,918 (Matsunaga).

Matsunaga discloses, referring primarily to figures 8a-c, a multilayer wired board constituting at least part of a electrical circuit board in which a plurality of wired boards are stacked so as to face their wired surfaces each other, wherein: electrical connection parts between said multilayer wired boards are connected through an elastic conductive material part (AGP) adhered to one of said wired boards; and at least part of a peripheral edge portion of said elastic conductive material part is adhered by a double-sided adhesive material part (SL) to seal said plurality of multilayer wired boards [claim 1].

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in view of US 5,736,681 (Yamamoto).

Matsunaga discloses the claimed invention as described above including wherein the bottom of said elastic conductive material part is adhered to one of said wired boards and the top of said elastic conductive material part is adhered to an electrical connection part of other side of said wired board, whereby electrical connection is established (col. 5, lines 1-10). Matsunaga does not specifically disclose that said elastic conductive material part is formed in a convex shape [claim 2]. However, Yamamoto teaches forming a conductive paste in a convex shape (col. 4, lines 45-65; figures 15A-C). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to form the elastic conductive material part in a convex shape in the invention of Matsunaga as taught by Yamamoto. The motivation for doing

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so would have been to permit penetration of the paste through the sealing layer (Yamamoto col. 4, lines 45-55).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in view of Yamamoto as applied to claim 2 above, and further in view of US 6,532,046 B1 (Yamashita).

The modified invention of Matsunaga teaches the claimed invention as described above except the modified invention of Matsunaga does not specifically teach that the height from the bottom to the top of said elastic conductive material is set to 200-400  $\mu\text{m}$  [claim 3]. However, the modified invention of Matsunaga does teach that the elastic conductive material spans sealing layer, which in turn spans the gap between the two substrates and seals the liquid crystal layer. Yamashita teaches a liquid crystal layer in the range of 200-400  $\mu\text{m}$  (col. 6, lines 60-68). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to further modify the invention of Matsunaga to have a liquid crystal layer in the range of 200-400  $\mu\text{m}$  as taught by Yamashita. The motivation for doing so would have been to provide a layer with sufficient display effects and fast imaging (Yamashita; col. 6, lines 60-68). Additionally, an effect of such a modification would inherently cause the height from the bottom to the top of said elastic conductive material to be set to 200-400  $\mu\text{m}$ .

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in view of US 2003/0034938 A1 (Yamada).

Matsunaga discloses, a touch panel comprising the configuration such that a light transmission first board (SUB1) having a light transmission conductive layer (ITO1) formed as a predetermined pattern thereon and a light transmission second board (SUB2) made of a material having a light transmission conductive layer thereon is placed opposite to said first board with a predetermined distance, wherein: electrical connection parts (AGP) between said first board and said second board are connected through an elastic conductive material part adhered only to said first board, at least part of a peripheral edge portion of said elastic conductive material part is adhered by a double-sided adhesive material part (SL) to seal said first board and said second board. Matsunaga does not specifically state that the second board is made of a flexible material [claim 7]. Instead, Matsunaga generically states that the second board is a transparent glass substrate (col. 3, 55-68). However, flexible transparent glass substrates are well known in the art as evidenced by Yamada ([0036]). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use a flexible substrate as the transparent glass substrate as is known in the art and evidenced by Yamada. The motivation for doing so would have been to allow the device to flex and thus be more resilient to mechanical damage.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in view of Yamada as applied to claim 7 above, and further in view of Yamamoto.



Matsunaga in view of Yamada teaches the claimed invention as described above including wherein the bottom of said elastic conductive material part is adhered to one of said wired boards and the top of said elastic conductive material part is adhered to an electrical connection part of other side of said wired board, whereby electrical connection is established (col. 5, lines 1-10). The modified invention of Matsunaga does not specifically disclose that said elastic conductive material part is formed in a convex shape [claim 8]. However, Yamamoto teaches forming a conductive paste in a convex shape (col. 4, lines 45-65; figures 15A-C). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to form the elastic conductive material part in a convex shape in the modified invention of Matsunaga as taught by Yamamoto. The motivation for doing so would have been to permit penetration of the paste through the sealing layer (Yamamoto col. 4, lines 45-55).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in view of Yamada and Yamamoto as applied to claim 8 above, and further in view of Yamashita.

The twice-modified invention of Matsunaga teaches the claimed invention as described above except the twice-modified invention of Matsunaga does not specifically teach that the height from the bottom to the top of said elastic conductive material is set to 200-400  $\mu\text{m}$  [claim 9]. However, the twice-modified invention of Matsunaga does teach that the elastic conductive material spans sealing layer, which in turn spans the gap between the two substrates and seals the liquid crystal layer. Yamashita teaches a

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liquid crystal layer in the range of 200-400  $\mu\text{m}$  (col. 6, lines 60-68). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to further modify the invention of Matsunaga to have a liquid crystal layer in the range of 200-400  $\mu\text{m}$  as taught by Yamashita. The motivation for doing so would have been to provide a layer with sufficient display effects and fast imaging (Yamashita; col. 6, lines 60-68). Additionally, an effect of such a modification would inherently cause the height from the bottom to the top of said elastic conductive material to be set to 200-400  $\mu\text{m}$ .

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents disclose connections between printed wiring boards:

|                    |                  |
|--------------------|------------------|
| US 2002/0172873 A1 | Ueda et al.,     |
| US 6,159,586       | Inoue et al.,    |
| US 6,395,993 B1    | Nakamura et al.: |


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCSN

  
Jeremy C. Morris  
Patent Examiner